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1	IS&R	L1	3415	(382/103,149,171,180,190,197,199,202,203,216,266,273).CCLS.	USPAT	2004/12/2 2 14:02			
2	BRS	L2	322	(contour\$1 or boundar\$3 or shape\$1) same (straight adj line\$1) same extract\$4	USPAT	2004/12/2 2 14:06			
3	BRS	L3	121	2 same imag\$3	USPAT	2004/12/2 2 14:06			
4	BRS	L4	34	3 same edge\$1	USPAT	2004/12/2 2 14:06			
5	BRS	L5	0	4 same ((label\$4 or tag\$4) near3 line\$1)	USPAT	2004/12/2 2 14:07			
6	BRS	L6	0	2 same ((label\$4 or tag\$4) near3 line\$1)	USPAT	2004/12/2 2 14:07			
7	BRS	L7	876	((label\$4 or tag\$4) near3 line\$1) same imag\$3	USPAT	2004/12/2 2 14:07			
8	BRS	L8	6	2 and 7	USPAT	2004/12/2 2 14:14			
9	BRS	L9	3858	line adj label\$4	USPAT	2004/12/2 2 14:15			
10	BRS	L10	78	9 same (straight adj line\$1)	USPAT	2004/12/2 2 14:27			
11	BRS	L11	7	10 same edge\$1	USPAT	2004/12/2 2 14:16			
12	BRS	L12	1	1 and 10	USPAT	2004/12/2 2 14:17			
13	BRS	L13	8	9 same (line\$1 near3 extract\$5)	USPAT	2004/12/2 2 14:19			

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14	BRS	L14	2641	line\$1 with imag\$3 with extract\$4	USPAT	2004/12/2 2 14:19			
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19	BRS	L19	2	edge\$1 same contour\$1 same (line\$1 near2 label\$4) same imag\$3	USPAT	2004/12/2 2 14:27			
20	BRS	L20	3854	label\$5 near3 edge\$1	USPAT	2004/12/2 2 14:27			
21	BRS	L21	142	9 and 20	USPAT	2004/12/2 2 14:27			
22	BRS	L23	1	1 and 22	USPAT	2004/12/2 2 14:56			
23	BRS	L22	21	21 and (straight adj line\$1)	USPAT	2004/12/2 2 14:29			
24	IS&R	L24	137	(382/195).CCLS.	USPAT	2004/12/2 2 14:56			
25	BRS	L25	0	15 and 24	USPAT	2004/12/2 2 14:56			


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 Tip: Looking for pictures? Try [Google Images](#)

Extraction of Straight Lines in Aerial Images

... A **straight-line** extractor that produces **line** descriptions from ... the pixel support of the **line** is generated ... many of the physically insignificant **lines**, given that ...

portal.acm.org/citation.cfm?id=141782 - [Similar pages](#)

Extracting straight lines

... Motion and Structure from **Line** Correspondences; Closed ... Rama Chellappa, **Extraction of Straight Lines** in Aerial ... Detection and Linear Feature **Extraction** Using a 2 ...

portal.acm.org/citation.cfm?id=5995 - [Similar pages](#)

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High Level Image Processing, feature extraction

... of more complex methods that can **extract** basic shape ... can be used to detect **straight lines** from edges ... If the pixels detected fall on a **straight line** then they ...

www.ccg.leeds.ac.uk/ian/msc/node23.html - 7k - [Cached](#) - [Similar pages](#)

[PDF] Hough Transform

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... We will consider **straight line extraction** first. ... the ideal case where we have one **straight line**, there will ... cause a problem when there are several **lines** in the ...

www.doc.ic.ac.uk/~gzy/teaching/vision/vision-s07.pdf - [Similar pages](#)

Photoshop - Extracting - Method 1

... One thing to keep in mind - - the Polygonal lasso tool is a "**straight line**" tool ... didn't. So I created a background on a couple of layers under the **image** of Hans ...

www.soniacoleman.com/Tutorials/method1.htm - 22k - [Cached](#) - [Similar pages](#)

[PDF] EXTRACTING GENERIC CLUSTERS USING EDGE-BASED FEATURES FROM IMAGE ...

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... Weighting (1) ♦ After the **extraction** of all **straight lines** several properties ... Long **straight line** segments often describe roads, rivers and might ...

lmb.informatik.uni-freiburg.de/people/gbrunner/dagstuhl/dagstuhl_04.pdf - [Similar pages](#)

[PDF] Urban BUILDING BOUNDARY EXTRACTION FROM IKONOS IMAGERY Abstract ...

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... the dominant direction in the original **image**, the Hough ... Instead of **extracting line** segments with two end points ... here finds the infinite **straight lines** on which ...

www.casi.ca/papers/3-08.pdf - [Similar pages](#)

Vectorisation - Thinning

... tends to be better at **extracting straight lines** from a ... methods, whilst retaining good **straight line** recognition and ... method will shorten some **lines**, which may ...

homepage.ntlworld.com/heatons/softsoft/wintopo/help/html/vectorise.htm - 6k - [Cached](#) - [Similar pages](#)

Projects Past and Present

... concept to locate the projection of **straight horizontal lines** ... by a family of horizontal **lines** θ_{main} , D_{main} ... This is similar to the point-line duality in ...

devernay.free.fr/publis/distcalib-mva.pdf - Similar pages



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straight line extracting image

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[PDF] Applied review of ultrasound image feature extraction methods

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... output in Figure 4(b) displays **straight line** features using a ... **Lines** 1 and 2 highlight the tendon edges well ... of how to proceed with **extracting** tendon features ...

www.cs.bris.ac.uk/Publications/Papers/1000641.pdf - [Similar pages](#)

[PDF] AUTOMATED ROAD SEGMENT EXTRACTION BY GROUPING ROAD OBJECTS

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... curves, polygons composed by short **straight lines** are not ... The **straight line** segment of the base polygon not ... appropriate for road segment **extraction** from medium ...

www.isprs.org/istanbul2004/comm3/papers/309.pdf - [Similar pages](#)

[PDF] FUSING STEREO LINEAR CCD IMAGE AND LASER RANGE DATA FOR BUILDING ...

File Format: PDF/Adobe Acrobat

... Also, a corresponding **straight** edge is searched on the epipolar **line** (See, Figure 11 ... 3D coordinates with forward intersection, 3D **lines** are generated ...

www.isprs.org/commission4/proceedings/pdfpapers/487.pdf - [Similar pages](#)

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[PDF] A Model of Stroke Segmentation

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... model performs well to **extract straight lines**, smooth curves ... filtering for multiple orientation **line** segmentation, Proceedings ... Curves and zigzag **lines**: (a) The ...

www.comp.nus.edu.sg/labs/chime/da/paperdownload/cao00icarc.pdf - [Similar pages](#)

[PDF] Text Extraction from Gray Scale Document Images Using Edge ...

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... marked for elimination are short isolated **lines** and spurs ... **Straight Line** Approximation (s) 1.47 1.53 ... RG Casey, "Block segmentation and text **extraction** in mixed ...

www.comp.nus.edu.sg/labs/chime/da/paperdownload/yuan01icdar.pdf - [Similar pages](#)

[[More results from www.comp.nus.edu.sg](#)]

[PDF] Author Guidelines for 8

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... and $m=\infty$ are used in representing **straight lines**, free curves ... between the different types of **line** segment be ... contour between the joint points **extracted** by the ...

mcs.une.edu.au/~kwan/publications/pdf/icip2002-zoe.pdf - [Similar pages](#)

[PDF] A New Method on Assigning Function Types to Line Segments for ...

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... of the earlier multi-stage joint points **extraction** method, the ... are given higher priority than **straight lines** or arcs ... scheme of function types to **line** segments. ...

mcs.une.edu.au/~kwan/publications/pdf/pacrim03-kawazoe.pdf - [Similar pages](#)

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[PDF] METRIC INFORMATION EXTRACTION FROM SPOT IMAGES AND THE ROLE OF ...

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... in order to be successful, **straight** epipolar **lines** can be ... Threshold of distance to the **straight line** [pixel] ... METRIC INFORMATION **EXTRACTION** FROM SPOT **IMAGES** 5 ...
e-collection.ethbib.ethz.ch/ show?type=inkonf&nr=108&part=text - [Similar pages](#)

SuperCOSMOS Sky Surveys

... value for the slope of the **straight line** portion of ... SSS **images**: DENSITY only The same PN region was **extracted**. ... iraf imstat on this fits **image** reveals: imstat ...
www-wfau.roe.ac.uk/sss/halpha/hapixel_units.html - 15k - [Cached](#) - [Similar pages](#)

Knowledge-Based **Image** Analysis for 3D Road Reconstruction

... 2D edges and their corresponding 3D **straight lines** are kept ... outside, at the border) is attached to each **line**. ... The region between the projected **lines** must belong ...
www.gisdevelopment.net/ aars/acrs/2000/ts4/digi0001b.shtml - 15k - [Cached](#) - [Similar pages](#)



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Tip: Looking for pictures? Try [Google Images](#)

A Practical Example

... these three pre-processes we have a list of all **lines**, curved or **straight**, a list of all **line** intersections (two or three **line** intersections) and a ...

www.cs.cf.ac.uk/Dave/AI2/node97.html - 7k - [Cached](#) - [Similar pages](#)

[PDF] Angle Extraction Using Digital Image Processing

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... equations from a digital **image** containing multiple **straight lines**. ... the relative orientation between **lines** independently of ... true size of the **line** segments being ...

www.mae.carleton.ca/~jhayes/Papers/Digital-Image-Processing.pdf - [Similar pages](#)

Raster to Vector Conversion -- Vectorization

... details more accurately and the **line** edges stay ... tends to be better at **extracting straight lines** from a ... an original **image** which comprises mainly **straight lines**. ...

www.parallax69software.com/vectorize.htm - 19k - [Cached](#) - [Similar pages](#)

Lecture 1: Introduction to Vision Systems

... in gradient, which would correspond to **straight lines**, or second ... simplest case is when we group pixels into **lines**. We can then express the **line** in a functional ...

www.doc.ic.ac.uk/~dfg/vision/v01.html - 15k - [Cached](#) - [Similar pages](#)

[[More results from www.doc.ic.ac.uk](#)]

Segmentation : Extraction of straight line segments

Extraction of straight line segments. AIM. ... to bring out segments of **straight lines** and the ... elements (extended or geometrically localized **lines**), adjusting **images** ...

sirius-ci.cst.cnes.fr:8220/version_anglaise/segmentation/segmentsdroite.html - 4k - [Cached](#) - [Similar pages](#)

Computer Vision and Systems - Stephan Prince

... the outer and inner road sign contours using **straight line** segments and ... and (ii) **extracting** all junctions points between pairs of **lines**, arcs and **line-arc** ...

euler.fd.cvut.cz/research/rs2/files/www.gel.ulaval.ca/Prince_S.html - 11k - [Cached](#) - [Similar pages](#)

Goal of FEX:

... boundaries can be approximated by **straight line** segments. ... blobs without a common boundary **line** in between ... locally complete are called VIRTUAL **lines** and VIRTUAL ...

homepages.inf.ed.ac.uk/rbf/CVonline/LOCAL_COPIES/FUCHS1/fexdemo.html - 8k - [Cached](#) - [Similar pages](#)

Image Transforms - Hough Transform

... transform can detect some of the **straight lines** representing building ... distance and angle of normal **lines** drawn from ... the ability of the Hough **line** detector to ...

homepages.inf.ed.ac.uk/rbf/HIPR2/hough.htm - 24k - [Cached](#) - [Similar pages](#)

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[PPT] Representation & Description

File Format: Microsoft Powerpoint 97 - [View as HTML](#)

... have been represented as **straight lines**, as a ... Regions represented by **straight line** segments (polygonal network ... is a tool for **extracting image** components useful ...

www.spatial.maine.edu/~peggy/Teaching/SIE_434/Lecture20.ppt - [Similar pages](#)

[PDF] **Word Extraction** in Text/Graphic Mixed **Image** Using 3-Dimensional ...

File Format: PDF/Adobe Acrobat - View as HTML

... **lines** and gures. In this section, we describe an **extraction** technique to determine the type of a connected component. ... by projecting them onto a **straight line**. ...

pearl.cs.pusan.ac.kr/publication/ParkHC1999ICCPOL.pdf - [Similar pages](#)



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Best 200 shown

Relevance scale ☐ ☐ ☐ ☐ ☐**1 Efficient web browsing on handheld devices using page and form summarization**January 2002 **ACM Transactions on Information Systems (TOIS)**, Volume 20 Issue 1

Full text available: pdf(4.47 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

We present a design and implementation for displaying and manipulating HTML pages on small handheld devices such as personal digital assistants (PDAs), or cellular phones. We introduce methods for summarizing parts of Web pages and HTML forms. Each Web page is broken into text units that can each be hidden, partially displayed, made fully visible, or summarized. A variety of methods are introduced that summarize the text units. In addition, HTML forms are also summarized by displaying just the t ...

Keywords: PDA, Personal digital assistant, WAP, WML, forms, handheld computers, mobile computing, summarization, ubiquitous computing, wireless computing

2 Multimodal communication: Multimodal model integration for sentence unit detection

Mary P. Harper, Elizabeth Shriberg

October 2004 **Proceedings of the 6th international conference on Multimodal interfaces**

Full text available: pdf(469.02 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we adopt a direct modeling approach to utilize conversational gesture cues in detecting sentence boundaries, called SUs, in video taped conversations. We treat the detection of SUs as a classification task such that for each inter-word boundary, the classifier decides whether there is an SU boundary or not. In addition to gesture cues, we also utilize prosody and lexical knowledge sources. In this first investigation, we find that gesture features complement the prosodic and le ...

Keywords: dialog, gesture, language models, multimodal fusion, prosody, sentence boundary detection

3 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research**

Full text available: pdf(4.21 MB)


Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

4 Specification and dialogue control of visual interaction through visual rewriting systems

P. Bottoni, M. F. Costabile, P. Mussio

November 1999 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 21 Issue 6

Full text available:  [pdf\(886.71 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

Computers are increasingly being seen not only as computing tools but more so as communication tools, thus placing special emphasis on human-computer interaction (HCI). In this article, the focus is on visual HCI, where the messages exchanged between human and computer are images appearing on the computer screen, as usual in current popular user interfaces. We formalize interactive sessions of a human-computer dialogue as a structured set of legal visual sentences, i.e., as a visual languag ...

Keywords: control automaton, dialogue control, visual languages

5 Document image understanding

Sargur N. Srihari



November 1999 **Proceedings of 1986 ACM Fall joint computer conference**

Full text available:  [pdf\(1.38 MB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

6 The FINITE STRING Newsletter: Abstracts of current literature

Computational Linguistics Staff


January 1987 **Computational Linguistics**, Volume 13 Issue 1-2

Full text available:  [pdf\(6.15 MB\)](#)  Additional Information: [full citation](#)
[Publisher Site](#)

7 Special issue on Machine learning methods for text and images: Kernel methods for relation extraction

Dmitry Zelenko, Chinatsu Aone, Anthony Richardella

March 2003 **The Journal of Machine Learning Research**, Volume 3


Full text available:  [pdf\(188.93 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

We present an application of kernel methods to extracting relations from unstructured natural language sources. We introduce kernels defined over shallow parse representations of text, and design efficient algorithms for computing the kernels. We use the devised kernels in conjunction with Support Vector Machine and Voted Perceptron learning algorithms for the task of extracting <tt>person-affiliation</tt> and <tt>organization-location</tt> relations from text. We experim ...

8 Automating the design of graphical presentations of relational information

Jock Mackinlay

April 1986 **ACM Transactions on Graphics (TOG)**, Volume 5 Issue 2

Full text available:  pdf(2.45 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

The goal of the research described in this paper is to develop an application-independent presentation tool that automatically designs effective graphical presentations (such as bar charts, scatter plots, and connected graphs) of relational information. Two problems are raised by this goal: The codification of graphic design criteria in a form that can be used by the presentation tool, and the generation of a wide variety of designs so that the presentation tool can accommodate a wide varie ...

9 Technical Papers: Inferring the environment in a text-to-scene conversion system

Richard Sproat

October 2001 **Proceedings of the international conference on Knowledge capture**Full text available:  pdf(180.65 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

There has been a great deal of work over the past decade on inferring semantic information from text corpora. This paper is another instance of this kind of work, but is also slightly different in that we are interested not in extracting semantic information per se, but rather real-world knowledge. In particular, given a description of a particular action --- e.g. *John was eating breakfast* --- we want to know where John is likely to be, what time of day it is, and so forth. Humans on hear ...



Keywords: common sense knowledge, statistical natural language processing, text-to-scene conversion

10 Special issue on using large corpora: I: Retrieving collocations from text: Xtract

Frank Smadja

March 1993 **Computational Linguistics**, Volume 19 Issue 1


Full text available:

 pdf(2.41 MB) 
[Publisher Site](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Natural languages are full of collocations, recurrent combinations of words that co-occur more often than expected by chance and that correspond to arbitrary word usages. Recent work in lexicography indicates that collocations are pervasive in English; apparently, they are common in all types of writing, including both technical and nontechnical genres. Several approaches have been proposed to retrieve various types of collocations from the analysis of large samples of textual data. These techni ...

11 Computational strategies for object recognition

Paul Suetens, Pascal Fua, Andrew J. Hanson

March 1992 **ACM Computing Surveys (CSUR)**, Volume 24 Issue 1Full text available:  pdf(6.37 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

This article reviews the available methods for automated identification of objects in digital images. The techniques are classified into groups according to the nature of the computational strategy used. Four classes are proposed: (1) the simplest strategies, which work on data appropriate for feature vector classification, (2) methods that match models to symbolic data structures for situations involving reliable data and complex models, (3) approaches that fit models to the photometry and ...


Keywords: image understanding, model-based vision, object recognition

12

Document analysis: Visual signature based identification of Low-resolution document

images

Ardhendu Behera, Denis Lalanne, Rolf Ingold

October 2004 **Proceedings of the 2004 ACM symposium on Document engineering**Full text available:  pdf(2.00 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we present (a) a method for identifying documents captured from low-resolution devices such as web-cams, digital cameras or mobile phones and (b) a technique for extracting their textual content without performing OCR. The first method associates a hierarchically structured visual signature to the low-resolution document image and further matches it with the visual signatures of the original high-resolution document images, stored in PDF form in a repository. The matching algor ...

Keywords: document visual signature, document-based meeting retrieval, documents' content extraction, low-resolution document image identification

13 Special issue on word sense disambiguation: Introduction to the special issue on word sense disambiguation: the state of the art

Nancy Ide, Jean Véronis

March 1998 **Computational Linguistics**, Volume 24 Issue 1

Full text available:  pdf(3.44 MB)  Additional Information: [full citation](#), [references](#), [citations](#)
[Publisher Site](#)

14 Automatic input of flow chart in document image

S. Ito

September 1982 **Proceedings of the 6th international conference on Software engineering**



Full text available:  pdf(629.74 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The technology of document image processing has the possibility of automatic document input. By utilizing it, the flow chart in document image as the alternate expression of FORTRAN source statements is automatically input into the computer. The paper reports the algorithm and the experimental results of field segmentation and classification in document image, the recognition of flow chart including control lines and blocks, and hand-written alpha-numerical characters in the blocks and the ...

15 Special issue on word sense disambiguation: Topical clustering of MRD senses based on information retrieval techniques

Jen Nan Chen, Jason S. Chang

March 1998 **Computational Linguistics**, Volume 24 Issue 1



Full text available:  pdf(2.08 MB)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)
[Publisher Site](#)

This paper describes a heuristic approach capable of automatically clustering senses in a machine-readable dictionary (MRD). Including these clusters in the MRD-based lexical database offers several positive benefits for word sense disambiguation (WSD). First, the clusters can be used as a coarser sense division, so unnecessarily fine sense distinction can be avoided. The clustered entries in the MRD can also be used as materials for supervised training to develop a WSD system. Furthermore, if t ...

16 Automatic verb classification based on statistical distributions of argument structure

Paola Merlo, Suzanne Stevenson

September 2001 **Computational Linguistics**, Volume 27 Issue 3

Full text available:  pdf(2.84 MB)  Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)
[Publisher Site](#)

Automatic acquisition of lexical knowledge is critical to a wide range of natural language processing tasks. Especially important is knowledge about verbs, which are the primary source of relational information in a sentence---the predicate-argument structure that relates an action or state to its participants (i.e., who did what to whom). In this work, we report on supervised learning experiments to automatically classify three major types of English verbs, based on their argument structure--sp ...

17 [Translator writing systems](#)

Jerome Feldman, David Gries

February 1968 **Communications of the ACM**, Volume 11 Issue 2

Full text available:  pdf(4.47 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

A critical review of recent efforts to automate the writing of translators of programming languages is presented. The formal study of syntax and its application to translator writing are discussed in Section II. Various approaches to automating the postsyntactic (semantic) aspects of translator writing are discussed in Section III, and several related topics in Section IV.

Keywords: compiler compiler-compiler, generator, macroprocessor, meta-assembler, metacompiler, parser, semantics, syntactic analysis, syntax, syntax-directed, translator, translator writing system

18 [Robust document image understanding technologies](#)

Henry S. Baird, Daniel Lopresti, Brian D. Davison, William M. Pottenger

November 2004 **Proceedings of the 1st ACM workshop on Hardcopy document processing**

Full text available:  pdf(92.22 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

No existing document image understanding technology, whether experimental or commercially available, can guarantee high accuracy across the full range of documents of interest to industrial and government agency users. Ideally, users should be able to search, access, examine, and navigate among document images as effectively as they can among encoded data files, using familiar interfaces and tools as fully as possible. We are investigating novel algorithms and software tools at the frontiers ...

Keywords: OCR error management, document analysis, information retrieval

19 [Existential second-order logic over graphs: Charting the tractability frontier](#)

Georg Gottlob, Phokion G. Kolaitis, Thomas Schwentick

March 2004 **Journal of the ACM (JACM)**, Volume 51 Issue 2

Full text available:  pdf(409.27 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Fagin's theorem, the first important result of descriptive complexity, asserts that a property of graphs is in NP if and only if it is definable by an existential second-order formula. In this article, we study the complexity of evaluating existential second-order formulas that belong to *prefix classes* of existential second-order logic, where a prefix class is the collection of all existential second-order formulas in prenex normal form such that the second-order and the first-order quan ...

Keywords: Existential second-order logic, NP-complete problems, finite model theory, graph coloring, graph constraints, prefix classes

20 Data clustering: a review

A. K. Jain, M. N. Murty, P. J. Flynn

September 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 3

Full text available:  pdf(636.24 KB)

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Clustering is the unsupervised classification of patterns (observations, data items, or feature vectors) into groups (clusters). The clustering problem has been addressed in many contexts and by researchers in many disciplines; this reflects its broad appeal and usefulness as one of the steps in exploratory data analysis. However, clustering is a difficult problem combinatorially, and differences in assumptions and contexts in different communities has made the transfer of useful generic co ...

Keywords: cluster analysis, clustering applications, exploratory data analysis, incremental clustering, similarity indices, unsupervised learning

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Trier, O.D.; Taxt, T.; Jain, A.K.;

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5 Mask extraction from optical images of VLSI circuits

Hong Jeong; Musicus, B.;

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6 Feature extraction methods applied to the clustering of electrocardiographic signals. A comparative study

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8 A new paradigm for reliable automatic formant tracking

Laprie, Y.; Berger, M.-O.;

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9 Resolving edge-line ambiguities using probabilistic relaxation

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11 Labeling of curvilinear structure across scales by token grouping

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<u>L9</u>	L8 same extract\$3	10	<u>L9</u>
	<i>DB=USPT; PLUR=YES; OP=ADJ</i>		
<u>L10</u>	body shape detection	0	<u>L10</u>
<u>L11</u>	(straight near3 line) same (label\$4 or tag\$4 or mark\$3 or highlight\$3) same (contour or shape) same extract\$4	9	<u>L11</u>

<u>L12</u>	(extract\$4 near5 line) same (contour or shape\$1) same (label\$4 or tag\$4) same imag\$3 same (histogram\$5 or peak) same edge	0	<u>L12</u>
<u>L13</u>	(extract\$4 near5 line) same (contour or shape\$1) same ((label\$4 or tag\$4) near3 line)	9	<u>L13</u>
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